

Investment Grade Solar System Feasibility

Underwriting and Presenting Investment Grade Solar Projects.

X430

EDP #321547

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Texts

Planning and Installing Photovoltaic Systems[“Planning”], Second Edition

ISBN-13: 978-1-84407-442-6

<http://www.amazon.com/Planning-Installing-Photovoltaic-Systems-Installers/dp/1844074420>

<http://www.scribd.com/doc/49244714/Planning-and-Installing-photovoltaic-Systems>

Online Repository

<http://groups.google.com/group/investment-solar-ucbx430-spring-2012>

Course Executive Summary

This course is designed to help industry practitioners identify and articulate the shortest possible path to successful commercial solar projects. Course objectives include:

- understanding how make better commercial solar investment decisions,
- articulating feasible projects, and
- further developing a student’s solar community of practice.

The course covers the current range of financial, technical, permitting, marketing/sales and capitalization options for commercial solar systems in the western United States. Solar can be a key component of value for a customer, for a solar developer, and for the places we leave behind.

The capstone of this course is the presentation by student teams of feasibility analysis on a potential investment grade solar project of their choice.

This course is delivered at a fast tempo, and is designed for those who already understand basic finance concepts such as internal rates of return, net present value, and discounted cash flows. Students should be familiar with Microsoft Excel. **THIS IS NOT AN INTRODUCTORY LEVEL COURSE.**

I will hold office hours for open questions thirty minutes before the start of each Tuesday evening class.

Saturday 10ASEP11 9A—>>**Getting Up to Speed**

Preparation: Read Chapters 1 and 2 of Planning. Download Moscone Case Study from Google Groups site.

<i>when</i>	<i>what</i>	<i>Support Media</i>
9A	Welcome, Introductions,	
915A	Course Intro and Concepts— Expectations Resources Google Groups Site Texts Introduction Learning method	Intro.ppt
1015A	How We Got Here Grid energy Prices AB 32 Government Mandates and Incentives Renewables Portfolio Standard Global Component Supply Investment Tax Credits PV is a Global Market The Math Behind Renewables The Variable, Distributed Gen Future	Roadmap.pdf
1130A	Walkthrough of Moscone Center Solar Array	<i>Moscone.zip</i>
12N	<i>Lunch break</i>	
1P	Introducing the Solar Feasibility Tools	SWFP.xls
2P	Proving Feasibility Right Customer Right Site Right Cap Stack Pain worth the Gain Framing the Win The Close	Proving.pdf
3P	Review a typical Report	FeasibilityOne.pdf
445P	Introducing Case Study One	SolarCS1.pdf

Tuesday 13SEP11 630P—>>**Instant Feasibility**

Preparation: Read Chapters 3 of Planning. Download Study Material from Google Groups site.

<i>when</i>	<i>What</i>	<i>Support Media</i>
630P	Recap and Tonight's Plan Objective: Quit spending time on bad deals.	Feas Intro.pdf

640P	Instant Feasibility Techniques—Google Earth Know your Customer Tariffs Harvestable Area—Google Sketchup Energy Productivity—Net Metering—Loads De-Risking the Deal Capitalization	Instant_feas.pdf
740P	Crafting the Feasibility Checklist	checklist.pdf
830P	Walkthrough a Solar Feasibility Report	SolarFeasRpt.pdf
9P	Review Case Study One	
925P	Introduce Case Study Two	

Tuesday 20SEP11 630P—>>Capitalizing a Solar Deal

Preparation: Download Financial Model and financing materials from Google Groups site.

<i>when</i>	<i>What</i>	<i>Support Media</i>
630P	Recap and Tonight’s Plan	Cap Intro.ppt
640P	Tax Benefits and Capitalization Nathaniel Eng , Manager, Novogradac & Co. http://www.linkedin.com/pub/nathaniel-eng/b/786/976	
830P	Components of Value Treasury Cash Grants Prepays, deferred revenue recognition DOE Loan Guarantee Program Federal Section 48 Investment Tax Credit CSI PBI suspension AB811 redux? Local—tax abatements, permit fee waivers California Feed in Tariffs SREC’s & Carbon Credits Residual Value	ppas & leases.pdf
910P	Review Case Study Two	SolarCS2.pdf
925P	Introduce Case Study Three	SolarCS3.pdf

Tuesday 27SEP11 630P—>>Harvesting and System Design

Preparation: Read Chapters 4,5,6 and 7of Planning. Download design materials from Google Groups site.

<i>when</i>	<i>What</i>	<i>Support Media</i>
630P	Recap and Tonight’s Plan	Design Intro.pdf
640P	Guest Lecturer— Laks Sampath , Senior Manager, Investment Department, Trina Solar http://www.linkedin.com/in/lakssampath	

	Component overview Designing for Thirty Year Life System Performance Tradeoffs Balance of Systems Costs and Design How to work with a PV Engineer The Independent Engineer's Report	
840P	Design Criteria and performance design optimization	Design wrap.pdf
910P	Review Case Study Three	

Tuesday 04OCT630P—>>**Wholesale Distributed Generation**

Preparation: Read Chapter 10 of Planning and and materials from Google Groups site.

<i>When</i>	<i>What</i>	<i>Support Media</i>
630P	Recap and Tonight's Plan	Selling_intro.pdf
640P	Guest Lecturer: Carlos Abreu, Principal, Strategic Renewable Investments, PG&E http://www.linkedin.com/pub/carlos-abreu/0/185/9aa Understanding the Reverse Auction Mechanism How Solar fits in the Loading Order How Utility Solar is Different	.ppt
830P	Using the Feasibility Study as a tool to close the Deal	Host_recruitment.pdf
925P	Student feasibility project review	

Tuesday 11OCT11 630P—>>**Finding the Shortest Possible Path to Profitable Projects**

Preparation: Download report materials from Google Groups site.

<i>When</i>	<i>What</i>	<i>Support Media</i>
630P	Recap and Tonight's Plan	pulling_intro.pdf
640P	Guest Lecturer— Paul Wyatt , Renewable Operations http://www.linkedin.com/pub/paul-wyatt/1/235/8ab —Operations, Maintenance and Maximizing your IRR Project Contingency	

730P	Pulling It All Together on Your Project	Together.pdf
830P	Course Evaluation Forms Completed	

Solar Power International, Dallas Convention Center, 17-20 OCT.

<http://www.solarpowerinternational.com/2011/public/enter.aspx>

Presentation Submittal:

All presentations are required to be emailed in .pdf format to the Instructor no later than 5P Pacific Daylight Time, Friday 21OCT11. Presentations emailed after this time will not be accepted for presentation.

Saturday 22OCT11 9A-5P— Saturday >> **Presentations**

<i>when</i>	<i>what</i>	<i>Support Media</i>
9A	Team 1	
930A	Team 2	
10A	Team 3	
11A	Team 4	
1130A	Team 5	
12N	Team 6	
1230P	Team 7	
1P	Team 8	
130P	Team 9	
2P	Team 10	
230P	Team 11	
3P	Course Debrief at Pizza Orgasmica EC2	

Grading

Students will be evaluated by earning Proficiency Points during the duration of the class. Proficiency Point accumulation will be posted on the class Google Groups site at the beginning of each week.

Starting with zero points, students accumulate Proficiency Points for their successful accomplishment of the following milestones

Proficiency	Max Points
<i>Attending Class, each session</i>	+20
<i>Active Class Participation, per class</i>	+20
<i>Analyzing Case Study, each</i>	+20
<i>Completing Host Customer shortlist</i>	+50

INVESTMENT GRADE SOLAR SYSTEM FEASIBILITY

<i>Shortlisting Sites and SAM performance model, max 1</i>	+40
<i>Site Feasibility Checklist complete, ea, max 3</i>	+50
<i>Crafting written Feasibility Study, as part of a guild, or independent</i>	+500
<i>Presenting Feasibility Study to class and jury</i>	+100
<i>Proving Feasibility</i>	+250

At the completion of class, students will earn the following grade based upon the Proficiency Points they accumulate:

<i>Grade</i>	<i>Proficiency Points Required</i>
A	>999
B	>799
C	>699
Pass/Fail	>699
Not For Credit	Not Applicable

Public transportation is highly recommended to this site. The Montgomery BART and Muni station is close by on Market Street. SamTrans and Golden Gate Transit serve the Transbay Terminal which is three blocks away.